

BBN Systems and Technologies

A Division of Bolt Beranek and Newman Inc.

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Monthly R&D Status Reports and Quarterly Technical Reports

1st Quarter
Calendar Year 1991

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Submitted by:

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Submitted to:

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Attn: LtCol Stephen E. Cross
Contracts Management Office.
Virginia Square Plaza
3701 No. Fairfax Drive - 7th Fl.
Arlington, VA 22203-1714

Defense Technical Informatio Center
Cameron Station
Attn: DTIC-FDAC
Alexandria, VA 22304-6145

DARPA/ISTO
Attn: Lou Kallis

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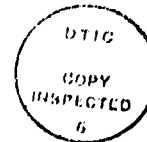
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Monthly R&D Status Reports and Quarterly Technical Reports

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The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressed or implied, of the Defense Advanced Research Projects Agency or the U.S. Government.

Statement A per telecon Ltc Stephen Cross
DARPA/SISTO
Arlington, VA 22203-1714

NWW 3/16/92

DART

IN PROGRESS REVIEW

24 JANUARY 1991

**SYSTEMS RESEARCH AND APPLICATIONS
CORPORATION**

DART

- **THE EUROPEAN EXPERIENCE**
- **THE USTRANSCOM EXPERIENCE**
- **PROPOSED DART ERROR AND INCIDENT
REPORT AND TRACKING SYSTEM**

EUCOM / DART

- **OVERALL ASSESSMENT OF DART PERFORMANCE WAS FAVORABLE**
- **EUCOM OPERATIONAL ENVIRONMENT**
 - **TWO KNOWLEDGEABLE OPERATORS**
 - **USER ESTABLISHED ROUTINE PROGRAM TO PERFORM ANALYSIS**
 - **SYSTEM USED DAILY TO FORECAST TOTAL TRANSPORT REQUIREMENTS**
 - **OUTPUT RETAINED WITHIN HOUSE**
 - **SYSTEM USED TO SUPPORT JOPEs**

EUCOM / DART

- **OBSERVATIONS**
 - **SYSTEM SLOW FOR SOME OPERATIONS**
 - **ABORT OPTIONS NEEDED FOR SYSTEM ERRORS**
 - **USER DEPENDENT UPON TECHNICAL SUPPORT**
 - **SYSTEM COULD NOT SUPPORT MULTIPLE USERS**
 - **PROBLEMS WITH RAPIDSIM I/O DATA**
 - **CANNOT ASSUME USERS WILL BE JOPEES QUALIFIED**
 - **EXTENDED SYSTEM CAPABILITIES**
- **USER SURVEYS COLLECTED**

EUCOM / DART

- **SYSTEM TRAINING**
 - **ONLY ONE SESSION CONDUCTED**
 - **ONE TO ONE RATIO**
 - **FIVE HOURS IN DURATION**
 - **HANDS ON LESSON**
 - **FAVORABLE COMMENTS**
- **EUCOM HAS FUTURE TRAINING REQUIREMENTS**
- **AFTER ACTION REPORT DUE NLT 30 JAN 91**

TRAINING

- **TRAINING PROGRAM DEVELOPMENT**
 - **UPDATE TRAINING MANUAL**
 - **BUILD GENERIC IMPLEMENTATION PLAN**
 - **ADD SUPPORTING MATERIALS**
 - **LESSON PLANS**
 - **STUDENT PERFORMANCE OBJECTIVES**
 - **SKILL MEASUREMENT TOOLS**
 - **RECORD TRAINED STUDENTS**

CAT TRAINING

- **TRAINED 7 OFFICERS AND NCO'S TO DATE**
- **LEVEL OF EXPERTISE VARIES**
- **PROVIDED USER SURVEY FORMS TO ALL TRAINEES**

OBSERVATIONS

- **RAPIDSIM QUESTIONABLE FOR P & A**
- **TPFDD EDITOR NEEDS ENHANCEMENTS**
 - **LEVEL 4 CARGO DETAIL**
 - **INCLUDE S & M DATA**
- **DART HAS TREMENDOUS POTENTIAL**
- **MUST REVISIT TRAINING ASSUMPTIONS**

RECOMMENDATIONS

- **EXPAND TCJ5-D ROLE IN DEFINING
ADDITIONAL DART FUNCTIONAL
REQUIREMENTS**
- **CONDUCT TRAINING OUT OF CAT AREA**
- **PROVIDE IR/SCP FORMS DURING TRAINING**

TESTING

- OUTLINE TEST PLAN 18 MAR 91
- FINAL TEST PLAN 19 AUG 91
- IN-PROGRESS TESTING (UNIT LEVEL) FEB-AUG
- INCIDENT REPORTS PROVIDED TO DEVELOPER THROUGHOUT

NEED

- **CONTROL OF
 - INCIDENT REPORTING
 - SYSTEM CHANGE PROPOSALS**
- **THIS INVOLVES
 - ACQUIRING & LOGGING INPUTS
 - ROUTING TO PROPER OFFICES
 - MONITORING & REPORTING STATUS**
- **KEY FUNCTION OF CONFIGURATION MGT**

APPROACH

- **COMBINE IR & SCP INTO ONE PROCESS**
- **DETERMINE ACTION/INFO ROUTING**
- **ESTABLISH PROCEDURES**
- **CIRCULATE FORMS**
- **REPORT AT IPRS**

DYNAMIC ANALYTICAL REPLANNING TOOL - DART

Control Number

Incident Report / System Change Proposal

Use this form to report all errors, incidents, or irregular operation encountered while using or testing DART, and to forward user proposals for system changes and enhancements. Include as much information as possible about the system environment at the time of incident. These reports should be kept unclassified.

Purpose (circle): *Incident Rpt* *Change Proposal*

System Impact (circle): *Minor* *Moderate* *Major*

Originator's Name: _____

Organization: _____ Date Submitted: _____

Phone Number: _____ Fax Number: _____

Fully describe incident (prior operations, attempted function or process, results, input/output indications, system errors, reproducibility, etc.) or proposed change, and include recommendations and specific system impact.

(continue on separate pages)

SYSTEM ENVIRONMENT

Site/Location: _____ Date/Time of Incident: _____

DART Version: _____ Test Number/Step (if during testing): _____

Associated Analytical Process (RAPIDSIM, FAST, etc.) and Version: _____

Are computer products available that show the problem, or reflect proof-of-test? _____

ROUTING

Within USTRANSCOM, route to TCJ5-S (ATTN: LtCol Morrow)

Otherwise: FAX to: SRA - Fairview Hts IL
(ATTN: H. Mosley)
(618) 624-6853

or Mail to: SRA Corporation
(ATTN: H. Mosley)
331 Salem Place, Suite 200
Fairview Hts IL 62208

DART ISSUES

- **NEED FOR CONFIGURATION MANAGEMENT SCHEME**
- **REQUEST TO ATTEND THE 5-7 FEBRUARY TECHNOLOGY CONFERENCE**

DART91 IN PROGRESS REVIEW

8 FEBRUARY 1991

AGENDA

- TRANSCOM update (Morrow, Lally)
- ITV prototype effort presentation
- System Enhancement Progress Report (Ton, Tiffany)
- System Enhancement Design Reports (Tiffany)
- Software Maintenance Report and Issues (Ton)
- Documentation Testing and Training Report (Mosley)
- Program Plan and Management Report (Estrada)
- Additional Issues and Action Items (All)
- Dart Demonstration

Program Plan and Management Report

- Hardware Migration
- Electronic Mail
- Detailed MacProject Plan for Builds 1 and 2
- Short Term Staffing Plan
- Use of "Earned Value" to measure progress

Plan For Hardware Migration

- Feb 4 - BBN shipped 4/470 from EUCOM To USTC to become unclassified development machine on Ethernet which has gateway to DDN.
- Feb 4 - BBN ordered new SparcStation2 to replace Washington demonstration machine. (Tentative delivery Mar 4.)
- Feb 8 - BBN Cambridge receives 4/470 loaner from Sun .
- March 1 (Tentative) - BBN Cambridge and San Diego each receive 4/470s (under DARPA R&D contract).
- March 4 - Ascent receives SparcStation2 returned from site survey.
- March 4 (Tentative) - Washington 4/470 goes to then current hot-spot. (BBN San Diego, Ascent or BBN Cambridge)

Software Enhancements Status

IA1 - Rename Query Button - Done

IA2 - Improve Copy Functions - Done

IA3 - Graphic Ops Indicators - Status indicators in both areas. More enhancement may be needed based on user feedback.

IA4 - Sq. Ft. Display - Displays in both areas. Complete roll up of sq. ft. information has performance implications.

IA5 - Auto Database Maintenance - Initial approach currently under review at Ascent. Closure on implementation approach by 14-Feb.

IA6 - Automatic Powerpoint Output - Works in gray scale. Working on extension to color.

IA7 - Name the Wolf - Working on it.

IA8 - Twenty Line TPFDD Viewer - Done. User scalable.

IB1- Automatic TPFDD Edits - Interviewed Nancy Moore.

IB2/IB3- Create TPFDD Records/Create, Edit Level 4 Cargo. Initial discussions held with MITRE; reviewing documentation.

IB4 - Awaiting Requirements from USTRANSCOM.

Software Enhancements continued

IB5 - Expanded Query Capability - Two design alternatives being reviewed.

IB6 - Modify Unit Characteristics (Gaining command unit) - Need to get to source of information

IB8 - Scroll update - Done

IB9 - Update Rapidsim level capability - Reviewing Rapidsim Update Document. Will discuss with Nancy Moore.

IB10 - FM Ops window mods - Done.

IB15 - TPFDD Map Speed - Ascent reviewing relevant BBN code.

IB16 - Auto Assign TPSN - Done.

IIA - Links To FAST - DART currently working on FAST hardware in Cambridge.

IIC - MRG/LOGSAFE - Reviewing MITRE Document. Awaiting decision.

IID - Cinnnection to SITAP - Presently reviewing SITAP documentation. H. Ton has scheduled trip to JDSSC Feb 25.

Electronic Mail Plan

TRANSCOM

- Kansas will provide network access mail boxes for Morrow, Goellner, and Mosley.
- BBN will provide a Macintosh networked to Kansas E-mailing Macintosh documents as needed.

ASCENT

- BBN will provide Ascent a modem and a mailbox on a BBN system. (Short term)
- Others in the project already have E-mail access. (DARPA, ESD, MITRE-SCOTT, J6, etc.)

ISSUES

- Network connection for unclassified machine (Ethernet with DDN gateway)
- Long term Internet connection for Ascent would require \$20K plus \$10K/year.

The Concept of "Earned Value"

- Earned value is a concept which can be used with schedule completion results to measure project progress.
- Each Enhancement Item has a labor estimate associated with it.
- The WBS breaks down each Enhancement Item into one or more parts.
- A labor estimate is easily assigned to each WBS item.
- As work proceeds, we identify completed or partially completed WBS items.
- Earned Value =
$$\text{SUM } (\% \text{ completed} * \text{WBS tasklabor}) / (\text{total project labor})$$
- Earned value compared with labor actually expended, determines whether we are ahead or behind the project plan

DART91 Documentation Plan

• Documents to be produced Format Phase

| | | |
|---------------------------|-------|-------------|
| Functional Description | 7935A | Enhancement |
| System Specification | 7935A | Fielding |
| System Test Plan | 7935A | Enhancement |
| Data Base Specification | 7935A | Fielding |
| Software Design Document | 2167A | Fielding |
| Interface Design Document | 2167A | Fielding |
| Users Manual | 7935A | Enhancement |
| System Admin Manual | 7935A | Fielding |
| Training Manual | 7935A | Enhancement |
| Operation and Main. Plan | 7935A | Fielding |

- BBN/SRA will produce a whitepaper on documentation tailoring by March 15.

Software Maintenance Bug Fixes

- Check boxes for shift dates work
- Fixed default set up for the CAT machine
- DART can probably be run by any user
- TPFDD Editor login is no longer echoed and will lead to single login ultimately
- Blue thing bug fixed
- Scroll bars fixed
- Overlapping buttons largely fixed
- Can now set RLD or ALD to zero
- Black holes filled with yellow stripes
 - some old IB11

Short Term On-Site Support Plan

- February 11,12,13 Donlon on call
- February 14 Donlon on Site
- February 19,20,21 Berliner,Doyle,Clesius
on- site
- February 26 on Goellner on site
- Week of March 3 Large Integration team
on-site

DART91 IN PROGRESS REVIEW

21 FEBRUARY 1991

AGENDA

- TRANSCOM update (Morrow, Lally)
- System Enhancement Progress Report (Ton, Tiffany)
- Staff Activities Update (Estrada)
- Software Maintenance Report (Ton)
- Documentation Testing and Training Report (Mosley)
- Management Report and Future Staff Activities (Estrada)
- Additional Issues and Action Items (All)

Friday 22 February 9:00

- Dart Build 1 Demonstration

Software Enhancements Status

IA1 - Rename Query Button - Done

IA2 - Improve Copy Functions - Really Done

IA3 - Graphic Ops Indicators - Done for Build 1

IA4 - Sq. Ft. Display - Displays in both areas in Build 1. Complete roll up of sq. ft. information has performance implications and is not in Build 1.

IA5 - Auto Database Maintenance - Have removed History information from Oracle database for Build 1. More complete solution in Build 2.

IA6 - Automatic Powerpoint Output - document "gif" format file for applications with network connections, completed "pict" format for applications without network connections (CAT).

IA7 - Name the Wolf - Peter dick is working on it for Build 2.

IA8 - Twenty Line TPFDD Viewer - Done for Build 1.

IB1- Automatic TPFDD Edits - Does what Nancy Moore does (Build 1).Working on new list for Build 2.

Software Enhancements Continued

IB2/IB3- Create TPFDD Records/Create, Edit Level 4 Cargo. Initial discussions held with MITRE; reviewing documentation.

IB4 - Enhanced graphical Outputs Got
Requirements from USTRANSCOM.

IB5 - Expanded Query Capability - Some Build 1 capability

IB8 - Scroll update - Done

IB9 - Update Rapidsim level capability - Completed for Build 1.

IB10 - FM Ops window mods - Got requirements for Build 2.

IB14 - Display Routes on Maps - an Interim Capability for Build 1.

IB16 - Auto Assign TPSN - Done.

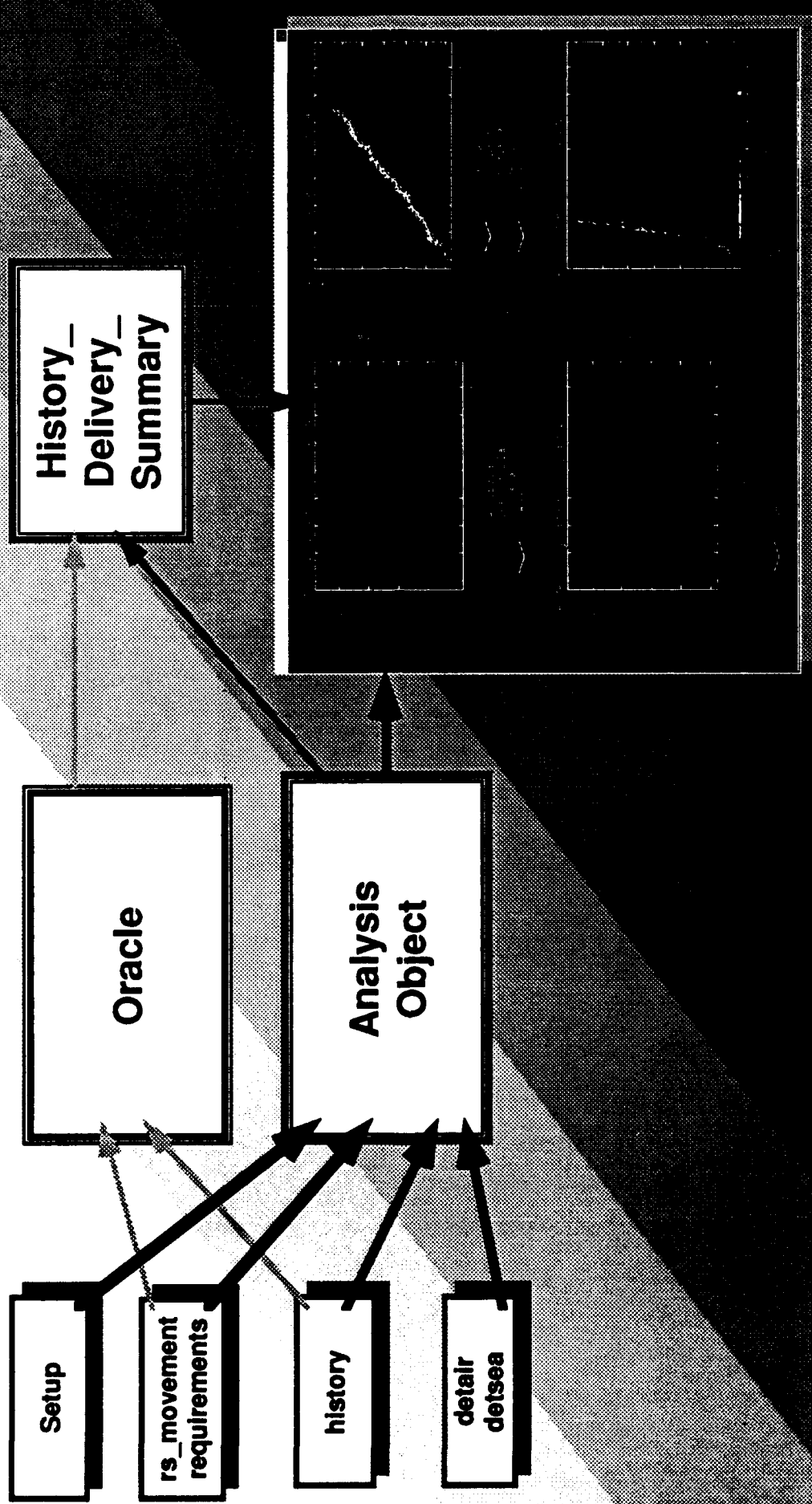
Software Enhancements Continued

IIA - Links To FAST - DART currently working on FAST hardware in Cambridge.

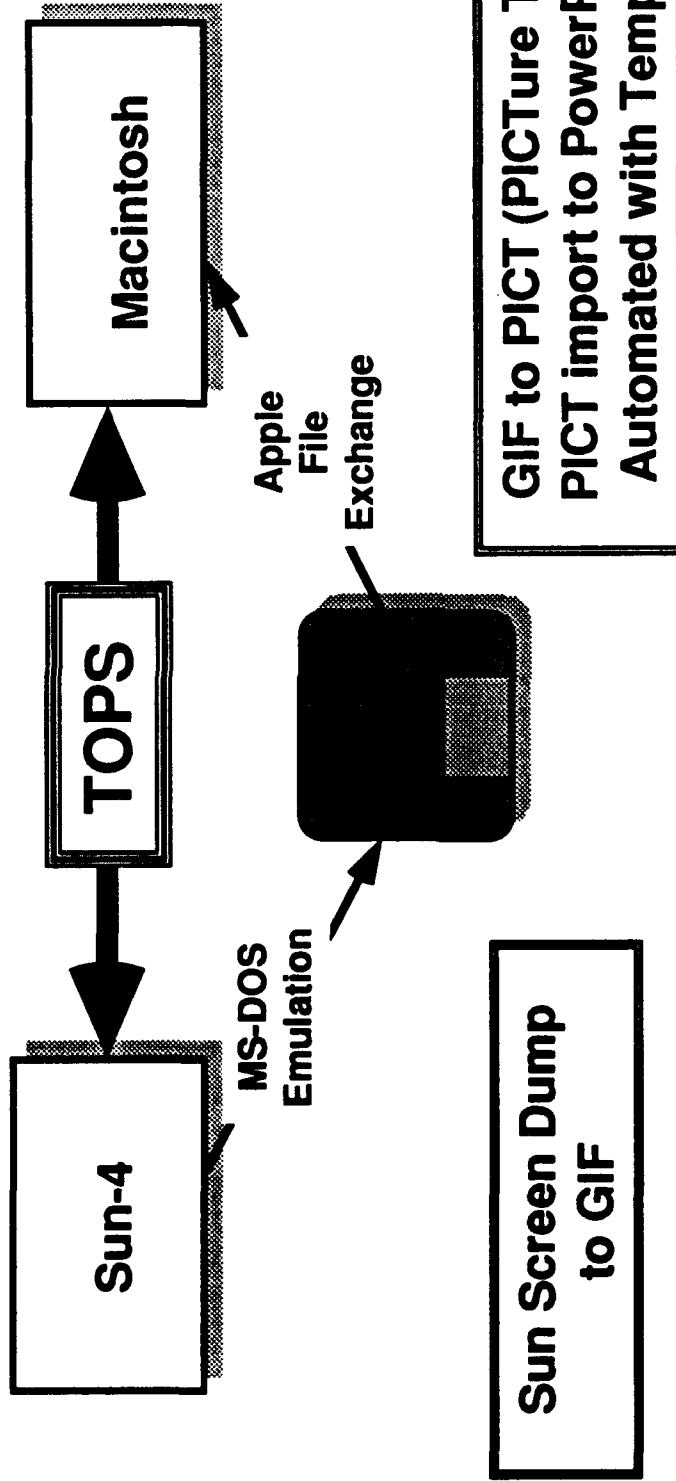
IIC - MRG/LOGSAFE - Have selected LOGSAFE. Doyle Reviewing MITRE LOGSAFE Document.

IID - Connection to SITAP - Presently reviewing SITAP documentation. H. Ton, T. Kral, J.Clesius to JDSSC Feb 25.

Analysis Without Oracle



Mac Graphics



BBN Staff Activities for the Rest of February

(From 8 February IPR)

Ton -technical Lead

SITAP Integration-Trip to JDSSC Feb 25

Auto DataBase maintenance (IA5)

Donlon - IA5, On-site support week of

11 February, Continued Bug Fixing

Clesius - on-site week of 11 February

TPFDD error Knowledge Acquisition

Berliner - on-site support week of Feb 18

Doyle - integrate DART with FAST workstation at

USTC, Week of Feb 19

Anderson - Name the Wolf, Training

P. Dick - Work with Anderson

M. Thome - consulting, finish AutoMac graphics

Dean - Auto DataBase maintenance

Goellner - On-site Support as of 26 February

ACTUAL

BBN Staff Activities for 8 to 21 February

Ton -Technical Lead, Build 1 integration, On-siteFebruary 17-22

**Donlon - On-site support week of
11 February, Integration of new
Rapidsim, Database clean up, other
Build 1 functions**

**Clesius - on-site weeks of 11 February and
Feb18, TPFDD error Knowledge
Acquisition and insertion of TPFDD
clean up code, Mac Graphics**

**Berliner - on-site since 15 February, integration
of new Rapidsim, Build 1 integration**

**Doyle - got DART to run on FAST Workstation,
studying LOGSAFE documentation**

**Anderson - began work on name the Wolf, on-
site Feb 19 -22 integration of Build 1
new graphics**

P. Dick - Continuing work on Name the Wolf

**M. Thome - consulting,in site build 1 integration
Feb 17 to 19**

**Dean - On-site Feb 15 -19, Fixed model
parameter setup, integration of new
Rapidsim, new graphics**

Software Maintenance Bug Fixes

- Add Square Ft. Totals (SCP4)
- Enter Specific FM (SCP5)
- Retrieve by project code (SCP6)
- FM compare display error (IR7)
- TPFDD security classification entry (SCP8)
- Shift Dates options (IR22)
- CIN record copy (IR27) (user confusion)
- PIN record PIC field (IR28)
- Movement type field (IR29)
- PAX field with cargo (IR30)
- Query enhancements
- Cargo category total displays (MTONS,STONS,SQFT)
- DataBase retrievals to TPFDD editor are 4 times faster

• Edit Model Parameters Fixed

- Edit model parameters expanded, and mouse documentation
- Run rapidsim command uses current setup parameters
- Sea distances computed from junctions file,
- Fixed add geoloc function in notional port editor
- Produce reqs and channl reports
- Free mode option in generate movement requirements
- Short fall correctly shown on plots

DART Activities for 22 Feb to 7 March

Ton - SITAP to DART design, plan Build 2

Donlon - Support Build 1 Acceptance testing,
AutoDataBase maintenance, support
Morrow tour

Clesius - SITAP to DART design

Berliner - Support Build 1 acceptance testing,
Support User's manual upgrade.

Doyle - Design LOGSAFE integration into DART

Anderson - Development of new Graphics
outputs

P. Dick - Complete Name the Wolf

M. Thome - consulting, training

Dean - Auto DataBase maintenance, consulting

Goellner - On-site Support

Ascent- support Build 1 acceptance testing, plan
Build 2

SRA - Build 1 Acceptance Testing, Upgrade
User's Manual

Financial Report

Funds expended in January \$102K

Effort Expended in January - 8.1 mm

Projected Effort expended by Feb 7 : 11mm

Earned value estimated at Feb 7 : 12mm

Note: a lot has happened since Feb 7

- large increase in level of effort
- large increase in accomplished work

DART

IN PROGRESS REVIEW

21 FEBRUARY 1991

**SYSTEMS RESEARCH AND APPLICATIONS
CORPORATION**

SRA
CORPORATION

DART

INTRODUCTION

- **USERS MANUAL**
- **TRAINING**
- **TESTING**
- **DART TEST OBSERVATIONS REPORT SYSTEM**

USERS MANUAL

- **ACCELERATED SCHEDULE FOR DRAFT
USERS MANUAL**
 - **INCORPORATE BUILD 1 CHANGES**
 - **UPDATE OF 16 NOV 90 VERSION**
 - **NOT IN THE FORMAT OF THE FINAL
USERS MANUAL**
- **RESUME WORKING ON FINAL FORMAT AFTER
DELIVERY OF DRAFT**

TRAINING

- **UPDATED TRAINING MANUAL TO BE
PUBLISHED 28 FEB**
- **ACTIVITIES IN PROGRESS**
 - **DEVELOPING FIVE TOPIC CURRICULUM
WITH SUPPORTING LESSON PLANS**
 - **DEVELOPING 53 STUDENT TASKS WITH
SUBTASKS**

TESTING

- ACCELERATING TEST PREPARATIONS TO MEET CHANGING TEST SCHEDULE
- REFINING EXPECTED TEST RESULTS

DART RAPIDSIM VALIDATION

- **COMPARE DART RAPIDSIM TO TCJ5 IN-HOUSE RAPIDSIM**
- **ESTABLISH COMMON INPUTS (TPFDD, SETUPS)**
- **COMPARE INTERMEDIATE FILES IN BOTH PROCESSES DOING STATISTICAL METHODS**
- **COMPARE FINAL OUTPUTS OF BOTH SYSTEMS**
 - **HISTORY FILES**
 - **GRAPHS**

TCJ5 TEST SUPPORT NEEDED

SRA "BUG" REPORTS

- PROVIDED TO DATE:

| | |
|-----------|----|
| •• IR'S: | 24 |
| •• SCP'S: | 27 |
| •• OTHER: | 1 |

IR DISPOSITION

• PROVIDED: _____

•• ALREADY CORRECTED: _____

•• NO LONGER APPLICABLE: _____

•• UNDER CONSIDERATION: _____

•• DEFERRED: _____

SRA
CORPORATION

11 March IPR Agenda

- TRANSCOM update (Morrow, Lally)
- Build 1 Report (Ton, Tiffany)
- Documentation Testing and Training Report (Mosley)
- Project Rebaselining Results (Estrada)
- Plan for Build 2 (Ton)
- Staff Report (Estrada)
- Action Items and Discussion (Lally)



Build 1 Contents

- Rename Query Button (IA1)
- Improved Copy Functions (IA2)
- Graphic Ops Indicators (IA3) (mod in build 2)
- Sq. Ft. Display (IA4) (TPFDD editor aggregation in build 2
- Auto Database Maintenance (IA5), removed History information
(More complete solution in Build 2.)
- Automatic Powerpoint Output (IA6)- interim solution
- "M" Line TPFDD Viewer (IA8)
- Automatic TPFDD Edits (IB1)- equivalent to inhouse RAPIDSIM
clean up procedures



Build 1 Contents

Continued

- Enhanced graphical Output (IB4) two new output graphs
- Expanded Query Capability (IB5)
- Scroll update (IB8)
- Update RAPIDSIM level capability (IB9)
- Display Routes on Maps (IB14) - an Interim Capability
- Auto Assign TPSN (IB16)



Build 2 Plan

General Approach

- Rip DART apart, harden, and reintegrate by 25 April
 - Multi-user
 - User interface
 - Architectural (internal) hardening
 - Simplified installation procedure
- Undertake parallel developments only in certain areas:
 - Areas which to not interfere with the hardening process
 - Areas which require interim capabilities
 - Areas which are needed for continuing demonstration
- Integrate all other enhancements after hardening is completed



Build 2 Plan (I)



Title : Graphics Ops Indicator (1.3)

**Approach: Simplify the BBN peek window
Add color representation**

Resource: K. Anderson

Time: by 4 April

Title: Square Ft. Display(1.4)

Approach: Ascent fixes deficiencies in current approach

Resource: Ascent

Time: by 4 April



Build 2 Plan (II)

Title: Auto Database Maintenance (1.5)

Approach:

- A detailed approach is currently under development.
 - o Likely solution: Separate Oracle table for separate TPFDDs.
- Interim Steps taken to improve performance
 - o Increase extents to reduce fragmentation
 - o Oracle OLTP option

Resource: Ascent, G. Donlon

Schedule: By 18 April

Title: Auto Mac Graphics (1.6)

Approach:

- Simplify Build1 procedure via Macros
- Provide additional documentation

Resource: J. Clesius

Schedule: 2 May
(Documentation for Build 1 Capability 4 April)

Build 2 Plan (III)

Title: Auto TPFDD Edits (1.8)

Approach:

- BBN will continue to define precisely the algorithms that can clean TPFDDs.
- Ascent implement algorithms as TPFDD queries. Mostly done, needs review

Resources: J. Clesius, Ascent

Time: By 16 May

Title: Expanded Graphics Outputs

Approach:

New Graphical outputs will be defined continuously and inserted into the system routinely.

Resources: J. Berliner, K. Anderson, P. Dick

Time: Continuosly from 11 March to 23 May



Build 2 Plan (IV)

Title: Expanded Query Output (1.10)

Approach:

- Provide Additional math functions: {=, -, *, /, not equal}.
- Discuss ramifications of sort keys.

→ events to be aware of in discussion needed by DM & Co.

Resources: Ascent

Time: by 14 April

Title : Update RAPIDSIM Level Capability

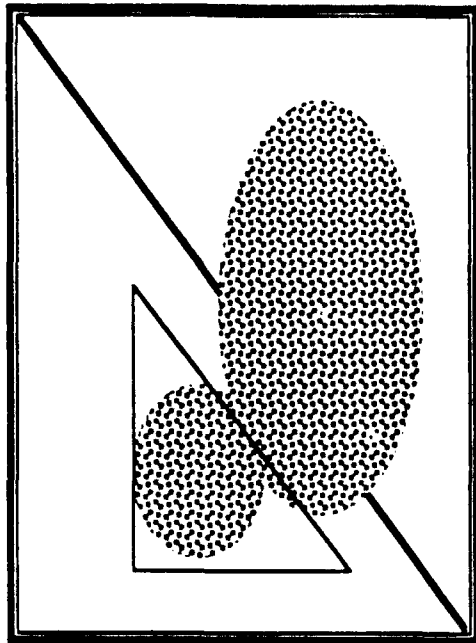
Approach: Add the ability to use Sq. Ft and MTONS

Resources: J. Berliner, M. Dean

Time: By 16 May



Name the Wolf Interface



Contributing ULNs/CINs/PINs (203)

| | |
|---------|---------|
| U-ABC01 | C-DEF01 |
| U-ABC02 | C-DEF02 |
| U-ABC03 | P-GHI03 |
| U-ABC04 | P-GHI04 |

U-ABC01: 234th Fire Brigade, 1234STONS, 4321 MTONS,
111 PAX

*Identify criteria of intersection
of the solution for more
reasonings. (WHY and
these ULN's (why),*

| | Contributing ULNs/CINs/PINs | Selected Deliveries |
|-------------|--------------------------------|------------------------|
| Total STONS | 67890 | 987 |
| Total PAX | 12345 | 543 |



Build 2 Plan (V)

Title: Name the Wolf (2.1)

Approach: See "Name the Wolf Slide"

Resources: P. Dick with help from K. Anderson

Time: By 18 April (preliminary version)
By 23 May (refined version)

Title: FM OPS Window Mods (2.6)

Approach: Multiple options allowed. Require further clarification of requirements (e.g. EAD - LAD comparisons).

Resources: Ascent

Time: By 28 April



Build 2 Plan (VI)



Title: Display Routes on Maps(2.7)

Approach:

- a) Display POE/ILOC/POD/DEST by geoloc.
- b) Display designated channels/RAPIDSIM port pairs.

Show all channels
through a geoloc
(not route)
actual
actual route

Resources: G. Donlon

channel capacity in the map as a
functionality in the map tool
which could extend to other data
from other models.

Time: By 2 May

Title: TPFDD map speed (2.8)

Approach:

Save maps as pixmaps. Explore ways to reduce
small-map features in favor of speed.

Resources: Ascent

Time: By 4 April



Build 2 Plan (VII)

Title: Links to Fast (2.9)

Talk to FAST people to get the exact FAST inputs.

Approach:

Produce from DART an input file to FAST as an OPLAN or subset of an OPLAN. Initial approach will be in standard TPFDD format.

Take software from Honeywell to convert TPFDD format to FAST format.

Resources: A. Doyle, Ascent

Time: By 18 April

Title: 20 Line TPFDD Editor (2.12)

Approach: Mark records by marking start and end of region

Resources: Ascent

Time: By 4 April



Build 2 Plan (VIII)

Title: Provide Access to Non-TPFDD Tables (2.13)

Approach: Retrieve records from additional tables
TUCHA, GEOLOC from TPFDD Editor
SRF and map information from Map Display

. use splform for Geoloc print
- check w/ B Frost for example of screens

Resources: Ascent, BBN

Time: By 18 April

Title: GTN Interfaces Study (2.10)

*interconnection of different
components and
→ changes? ←
communication links to
do scenario*

Approach:

1. Determine user requirements via scenario
2. Determine required additional DART enhancements
3. Determine additional DART multi-user requirements
4. Determine need for third party tools and their use
5. Determine connectivity requirements

Resources: J. Berliner, S. Storch, A. Doyle, User Rep

Time: By 30 May

System Hardening (2.11)



Approach:

1. Multiple DART Users
 - Oracle database
 - TPFDD Editor
 - Model Analysis
2. Simplify and document installation procedure
3. Consolidate and cleanup internal representation of setup
4. Window reorganization
 - Single frame, multiple configuration to eliminate inactive windows.
 - Menu reorganization to clarify procedures
 - Menu button to select DART or TPFDD Editor window
 - Redesign optional parameter menu for generating movement requirement.
5. CLIM bug Eradication
6. "Gorilla - Proofing"
 - Control spawning multiple processes
 - Descriptions of recovery procedures in the Users Manual
 - User input validation

7. *Online help* -

Resources: H. Ton, K. Anderson, G. Donlon, M. Thome, M. Dean, Ascent

Time: 25 April





Project Rebaselining

Motivation

- Enhancement Effort is incrementally funded
- Full funding of original enhancements estimated at \$3.4M
- Current estimates suggest \$2.0M funding in FY91
- LTC Morrow has deferred some enhancements from Build 2 to Build 3 and from Build 3 to FY92





Project Rebaselining Procedure

- Calculate funds expended to date (28 Feb)
- Recost Build 2 and Build 3 assuming deferred requirements
- Review Documentation, Testing and Training costs
- Calculate Cost to Complete
- Adjust efforts and priorities to accomplish redefined task





Assumed Deferred Requirements Relative to 15 February Document

- Create TPFDD records (2.2) deferred to Build 3
- Create/Edit Level 4 Cargo (2.3) deferred to build 3
- Part 2 of 3.1 TPFDD viewer enhancement deferred to FY92
- Part 2 of 3.2 Expanded query capability deferred to FY92
- 3.4 Updates to RAPIDSIM deferred to FY92





Rebaselining Additional Assumptions

- Dart Fielding effort starts in April 1991
- Responsibility for bug fixing shifts to fielding effort
- Responsibility for Training shifts to fielding effort
- All work in enhancement effort completed by 30 Sept





Rebaselining Conclusions

- Build 2 Labor estimates - 38 MM
- Build 3 Labor estimates - 30 MM
- Level of effort in documentation, testing, training - 3 people
- The enhancement effort can be completed with no management reserve
- The project should be rebaselined again at the end of Build 2





DART Activities for 11 March- 21 March

Ton - Continued planning Build 2

Donlon - Support Build 1 Acceptance testing,
AutoDataBase maintenance, System Hardening

Clesius - SITAP design, TPFFD edits

Berliner - Support Build 1 acceptance testing,
Build 2 Planning,

Doyle - LOGSAFE integration, Run DART on
FAST terminal at TRANSCOM, GTN study

Anderson - new Graphics, System Hardening

P. Dick - New Graphics

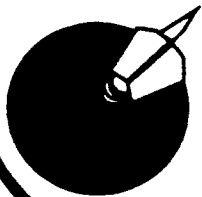
M. Thome - system Hardening

Dean - System Hardening

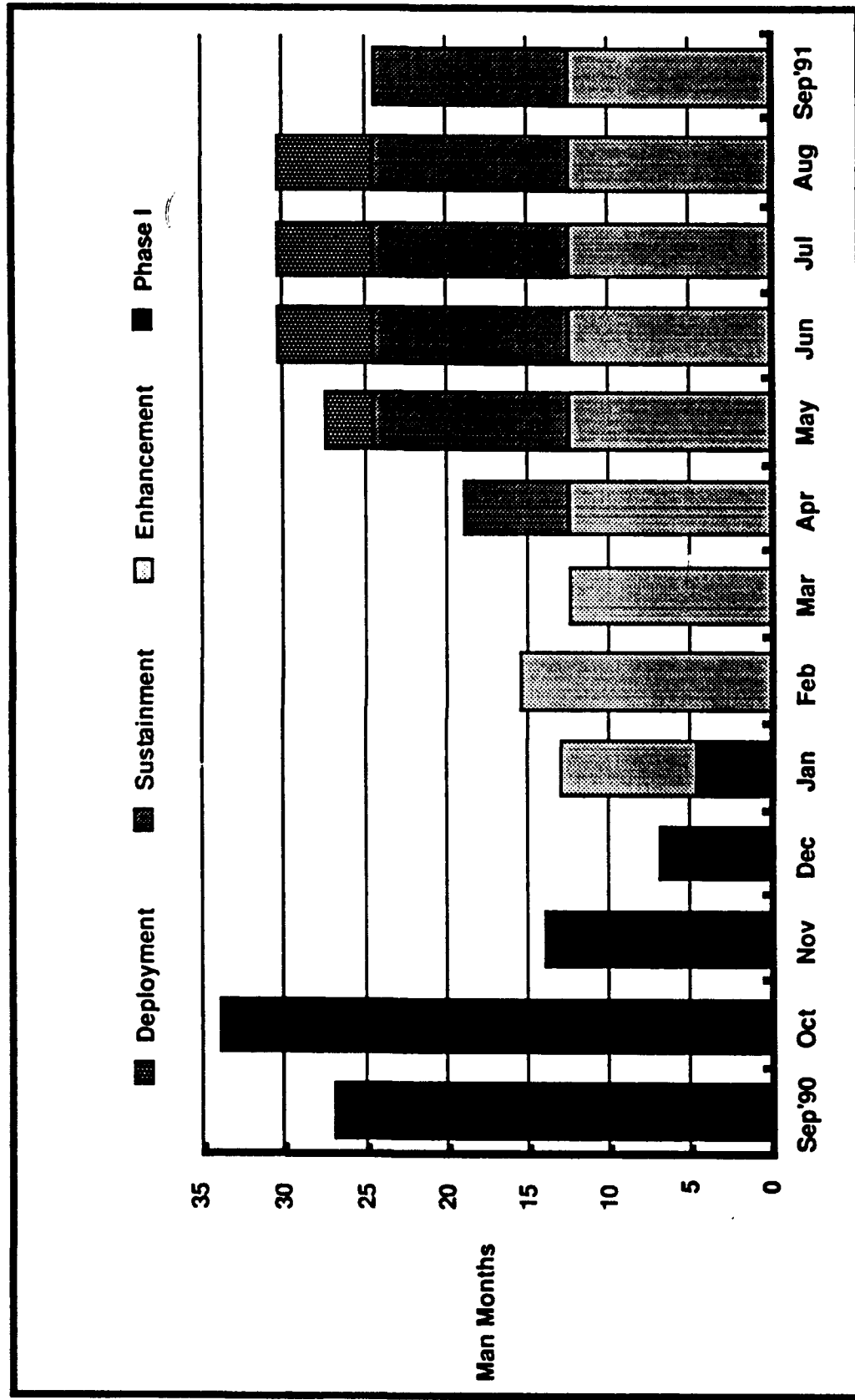
Goellner - On-site Support

Ascent- support Build 1 acceptance testing, start
Build 2

SRA - Build 1 Acceptance Testing, Upgrade
User's Manual, Examine training requirements



DART Level of Effort



DART

IN PROGRESS REVIEW

11 MARCH 1991

**SYSTEMS RESEARCH AND APPLICATIONS
CORPORATION**

SRA
CORPORATION



DART

INTRODUCTION

- **USERS MANUAL**
- **TRAINING**
- **TESTING**
- **DART TEST OBSERVATIONS REPORT SYSTEM**

SRA
CORPORATION





USERS MANUAL

- INTERIM USERS MANUAL
 - .. TO BE DELIVERED 15 MARCH 1991
 - .. BUILD I CHANGES INCORPORATED INTO 16 NOV 90 VERSION
- COORDINATED MANUAL WITH:
 - .. LTCOL DON MORROW (TCJ5S)
 - .. BOB MCCORMACK (MITRE CORP.)
- RESUME WORKING ON FINAL FORMAT AFTER DELIVERY OF INTERIM MANUAL

SRA
CORPORATION

TESTING

- TEST PLAN (DRAFT) 26 FEB - 1 MAR
- EXECUTED 15 MAR
- DELIVER PLAN
- TEST ANALYSIS REPORT TBD
- TEST RESULTS PROVIDED THROUGHOUT





TESTING

- THOROUGH AND DETAILED ANALYSIS
- DISCREPENCIES DOCUMENTED
- CONTRIBUTION TO THE TRAINING AND USERS
MANUAL

TRAINING

- DEVELOPING PROGRAM FOR CENTRAL AND USER SITE TRAINING OPTIONS
 - CENTRAL LOCATION
 - AT SCOTT AFB
 - TWO WEEK COURSE
 - TRAIN USER/INSTRUCTOR AND SYSTEM ADMINISTRATOR
 - USER SITE
 - TWO WEEKS ON SITE
 - TWO DAY COURSE PER USER
 - TRAIN USERS

SRA
CORPORATION



IR DISPOSITION



IR SCP OTH

| | | | |
|-------------------------|-------|-------|-------|
| • TOTAL RECEIVED: | _____ | _____ | _____ |
| •• CORRECTED / CHANGED: | _____ | _____ | _____ |
| •• UNDER CONSIDERATION: | _____ | _____ | _____ |
| •• FOR SPONSOR REVIEW: | _____ | _____ | _____ |
| •• DEFERRED / OBE: | _____ | _____ | _____ |
| •• STATUS PENDING: | _____ | _____ | _____ |

AS OF: _____

SRA
CORPORATION

TPFDD: 090TP C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART

Mouse Documentation and Help Line

TPFDD SETUP RESULTS EDIT MODEL WINDOW DISPLAY UTILITIES HELP EXIT

SETUP

TPFDD

| | |
|-----|--|
| ABC | |
| ABC | |
| ABC | |
| ABC | |

RapidSim

SITAP

PFE

RESULTS

| | | | |
|--|--|--|--|
| | | | |
| | | | |

DART Status: Ready

TPFDD:

0901P C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART

SETUP: • Im-72

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|---------------------------|-------------|-----------------------|------------|----------|-------------------|--------------|--------------------|------|------|
| Select TPFDD | New | Open ... | Undo | √ None | S: unclassified | √ Parameters | Clear Screen | | |
| View/Edit TPFDD | Open ... | Close | Cut | RapidSim | S: M1-7 | TPFDD | Printer Options | | |
| Load TPFDD into DART DB | Close | Results ... | Copy | STAP | S: • M1-6 | Map | Peak Status Window | | |
| Write TPFDD from DART DB | Save | View Standard Results | Paste | PFE | √ S: • Im-72 | Results | Query DART DB | | |
| Delete TPFDD from DART DB | Save as ... | View Results | Clear | | S: • unclassified | | Show DART Version | | |
| F11E Report | Delete ... | View Multiple Results | Duplicate | | | | Show Disk Usage | | |
| F11D Report | | 2-Y Teleoperation | Select All | | | | | | |
| | | Offload C-Data | | | | | | | |

DART Status: Ready

TPFDD:

0901P C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART

SETUP: • Im-72

Mouse Documentation and Help Line

| | | | | | | | | | |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|
| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|

TPFDD:

7,000 ULNs
3,000 CINs
2,000 PINs

783,660 STONS
2,345,678 MTONs
3,456,789 SqFt
247,971 PAX
8,123,570 CBBLs POL

Compute

Setup:

Scenario for Mobilization Condition PM

Ships

Quantity: 24
Total Capacity::
2,456,789,000 MTONS

Planes

Quantity: 153
Total Capacity::
1,234,567,000 STONS

Aggregation
Ports

12 SPOE
18 APOE
6 SPOD
6 APOD

Canals:

| | | |
|--------|---------------------------------------|------------------------------|
| Panama | <input checked="" type="radio"/> Open | <input type="radio"/> Closed |
| Suez | <input checked="" type="radio"/> Open | <input type="radio"/> Closed |

DART Status: Ready

TPFDD:

0001P C- Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART

SETUP: • Im-72

Mouse Documentation and Help Line

TPFDD

SETUP

RESULTS

EDIT

MODEL

WINDOW

DISPLAY

UTILITIES

HELP

EXIT

TPFDD:

7.0
3.0
2.0
78.0
2.3
3.4
24.7
8.1

Port: ALL

| | | | |
|-------|-----|-----|-----------------------|
| SBB | 1 | New | 22:1 |
| FBB | 2 | New | 1:1, 12:1 |
| SL-7 | 0 | New | |
| SRORO | 7 | New | 3:4, 14:3 |
| FRORO | 3 | New | 22:2, 23:1 |
| SSSC | 6 | New | 5:2, 10:2, 15:2 |
| FSSC | 14 | New | 10:5, 20:5, 30:4 |
| SNSSC | 5 | New | 10:5 |
| FNSSC | 6 | New | 1:3, 21:3 |
| SC/RR | 22 | New | 4:4, 29:18 |
| FC/RR | 1 | New | 35:1 |
| SMTNK | 3 | New | 18:3 |
| MDTNK | 3 | New | 18:2, 36:1 |
| HATNK | 5 | New | 17:1, 34:4 |
| SHTNK | 12 | New | 6:3, 18:3, 30:3, 42:3 |
| FLASH | 2 | New | 12:2 |
| TRAIN | 4 | New | 12:2, 24:2 |
| FSEAB | 0 | New | |
| SPAX | 0 | New | |
| LGTNK | 1 | New | 20:1 |
| SCBB | 1 | New | 30:1 |
| FCBB | 2 | New | 45:2 |
| Total | 110 | | |

Cancel

Okay

Edit Ships

DART Status: Ready

TPFDD:

0901P C-Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART

SETUP: • fm-72

Mouse Documentation and Help Line

TPFDD

SETUP

RESULTS

EDIT

MODEL

WINDOW

DISPLAY

UTILITIES

HELP

EXIT

TPFDD:

7.0
3.0
2.0
78
2.3
3.4
24
8.1

Port: ALL

| | | | |
|--------|-----|-----|--------------------------------|
| C141B | 16 | New | 2:12, 22:4 |
| C5 | 25 | New | 1:16, 12:9 |
| KC10 | 12 | New | 6:12 |
| LRWC-A | 44 | New | 3:24, 14:20 |
| LRWC-B | 22 | New | 30:2, 60:20 |
| LRWP-A | 68 | New | 5:2, 10:20, 15:26, 35:20 |
| LRWP-B | 34 | New | 10:5, 20:5, 30:4, 45:10, 60:10 |
| Total | 221 | | |

Edit Planes

Cancel

Okay

DART Status: Ready

TPFDD:

0901P C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|-----------------|---------------------------|-------------------------|-----------|-----------|------|------|
| | | | REGION | ZOOM | SHOW | PORTS | FIND | | |
| | | | United States | Zoom In About a Point | TPFDD Channels | Select | | | |
| | | | Mediterranean | Zoom Out About a Point | Sea Routes | Describe | | | |
| | | | North America | Center On a Point | Air Routes | Add | | | |
| | | | South America | | Cargo | Delete | | | |
| | | | Europe | | Assets | Add MAPDS | | | |
| | | | Africa | | | Add MAPDS | | | |
| | | | Asia | | Port Representations | Add MAPDS | | | |
| | | | World: Pacific | | | Add MAPDS | | | |
| | | | World: Atlantic | | | Add MAPDS | | | |

DART Status: Ready

TPFDD:

090TP C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP

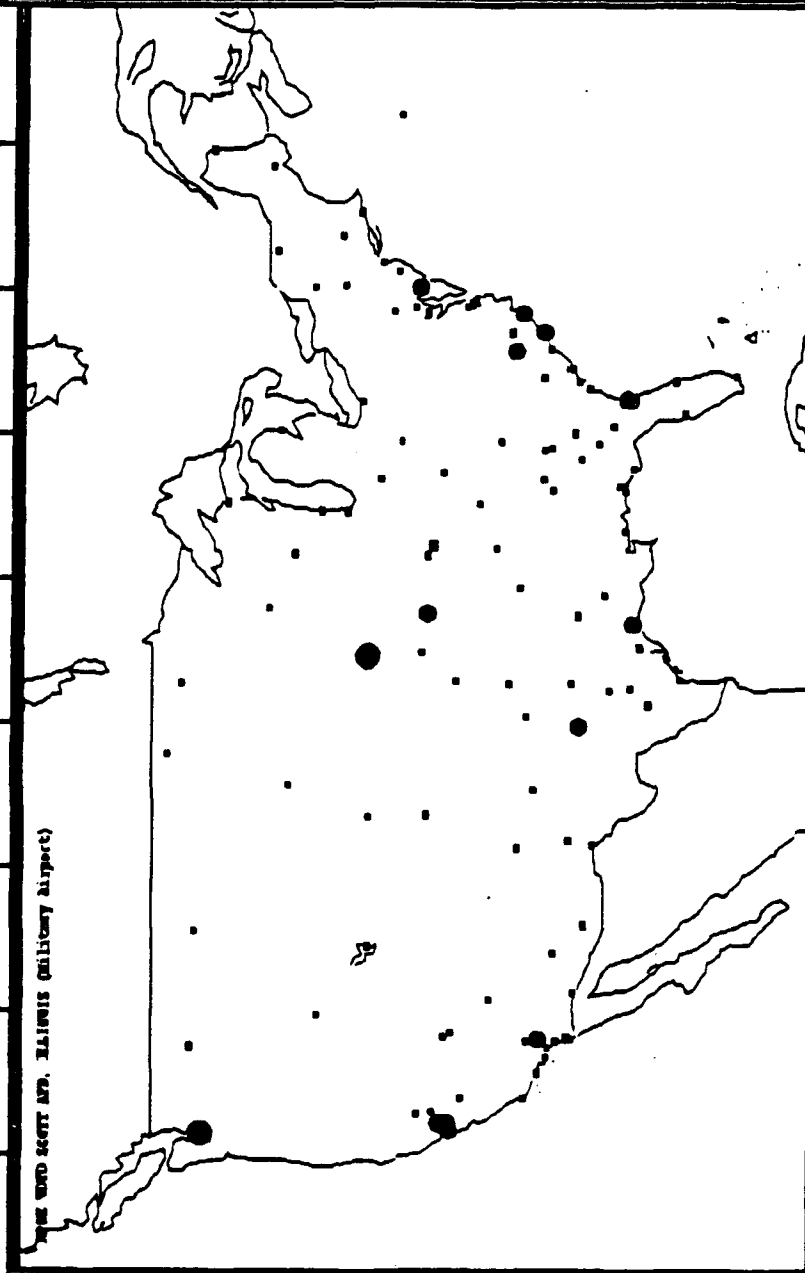


DART

SETUP: • Im-72

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|
| | | | | | | | | | |
| | | | | | | | | | |



Selected Geolocs

↑ [] ↓

All Geolocs

↑ [] ↓

DART Status: Ready

TPFDD:

0001P C-Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART RapidSim

SETUP: • Im-72

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|---------------------------|-------------|-----------------------|------------|------------|-------------------|--------------|---------------------|------|------|
| Select TPFDD | New | Open ... | Undo | None | S: unclassified | ✓ Parameters | Clear Screen | | |
| View/Edit TPFDD | Open ... | Close | Cut | ✓ RapidSim | S: Id-7 | TPFDD | Printer Options | | |
| Load TPFDD into DART DB | Close | Delete ... | Copy | STAP | S: • Id-8 | Map | Print Status Window | | |
| Write TPFDD from DART DB | Save | View Standard Results | Paste | PFE | ✓ S: • Im-72 | Results | Query DART DB | | |
| Delete TPFDD from DART DB | Save as ... | View Results | Clear | | S: • unclassified | | Show DART Version | | |
| F11E Report | Delete ... | View Multiple Results | Duplicate | | R: T10 Baseline | | Show Disk Usage | | |
| F11D Report | | X-Y Tabulation | Select All | | R: T10 No Ships | | | | |
| | | Offset C-Day | | | R: T20 Baseline | | | | |

DART Status: Ready

TPFDD:
 0901P C - Test OPLAN for DART
 Unclassified Turnplan Test Case
 Created 9-Dec-91 by MITRE CORP



DART RapidSim

SETUP: • fm-72

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | FDT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|---|-------|---------|-----|-------|--------|---------|-----------|------|------|
| <div> <div> TPFDD: 7,000 ULNs 3,000 CINs 2,000 PINs 783,660 STONS 2,315,678 MTONs 3,456,789 SqFt 247,971 PAX 8,123,570 CBBLs POL </div> <div> Compute </div> </div> <div> TPFDD Aggregation 2,876 Movement Requirements 782,454 STONS (99.85%) 2,331,601 MTONs (99.40%) 3,410,123 SqFt (98.65%) 242,956 PAX (97.98%) 7,979,680 CBBLs POL (98.23%) </div> <div> Compute </div> | | | | | | | | | |

RapidSim

Run

DART Status: Ready

TPFDD:

0901P C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART RapidSim

SETUP: T10-220-01

Mouse Documentation and Help Line

TPFDD

SETUP

RESULTS

EDIT

MODEL

WINDOW

DISPLAY

UTILITIES

HELP

EXIT

TPFDD:

7.0
3.0
2.0
78:
2.3
3.4
24:
8.1

TPFDD

2.8
78:
2.3
3.4
24:
7.9

RapidSi

Aggregate TPFDD Movement Requirements

☐ Standard Parameters
☒ Optional Parameters

On-Call Parameters

On-Call Threshold C-Day

☒ Omit On-Call Units

☐ Set LAD of On-Call Units to Threshold

Transportation Mode Parameters

☒ Get Mode from TPFDD

☐ Free Mode All Units

☐ Free Mode Specified Force Modules Only

Force Modules to Free Mode

TID

Force Module Parameters

☐ Include Full TPFDD

☒ Include Specified Force Modules Only

Force Modules to Include

TID

Reports

Generate REQS Report?

☒ Yes ☐ No

Generate CHANNL Report?

☒ Yes ☐ No

CHANNL Report Date:

☐ ALD ☐ EAD ☒ EAD ☐ EAD

Cancel

Okay

Sea
POD

Planes

Attrition
Parameters

Other
Parameters

DART Status: Ready

TPFDD:

0901P C- Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DART RapidSim

Result: T16 Baseline

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|

TPFDD:

Compute

7,000 ULNs
3,000 CINs
2,000 PINs

783,660 STONS
2,345,678 MTONs
3,456,789 SqFt
247,971 PAX
8,123,570 CBBLs POL

TPFDD Aggregation

Compute

2,876 Movement Requirements

782,454 STONS (99.85%)
2,331,601 MTONs (99.40%)
3,410,123 SqFt (98.65%)
242,956 PAX (97.98%)
7,979,680 CBBLs POL (98.23%)

RapidSim

Run

| | On Time | Late |
|-----------|-----------|---------|
| Air STONS | 42,123 | 22,128 |
| Sea MTONs | 2,100,000 | 123,456 |
| PAX | 237,946 | 10,010 |
| POL CBBLs | 7,969,680 | 0 |

Setup:

Scenario for Mobilization Condition PM

Ships
Quantity: 24
Total Capacity: 2,456,789,000 MTONs

Planes
Quantity: 153
Total Capacity: 1,234,567,000 STONS

Aggregation Ports
12 SPOE
18 APOE
6 SPOD
6 APOD

Canals:
Panama ☒ Open ☐ Closed
Suez ☒ Open ☐ Closed

RapidSim Parameters:

Air POE **Sea POE** **Air POD** **Sea POD**

Ships **Planes**

Commodity Types

Convoy Parameters **Attrition Parameters**

Aircraft Loading Policy

Time Periods **Other Parameters**

DART Status: Ready

TPFDD:

090TP C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



DARTRapidsim

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|-----------------|---------------|----------------|-----------|-----------|------|------|
| | | | REGION | ZOOM | SHOW | PORTS | UTILITIES | | |
| | | | United States | Zoom In | TPFDD Channels | Select | | | |
| | | | Mediterranean | About a Point | Sea Routes | Describe | | | |
| | | | North America | Zoom Out | Air Routes | Add | | | |
| | | | South America | About a Point | Cargo | Delete | | | |
| | | | Europe | Center | Assets | Add NSPOE | | | |
| | | | Africa | On a Point | | Add NAPOE | | | |
| | | | Asia | | | Add NSPOD | | | |
| | | | World: Pacific | | | Add NAPOD | | | |
| | | | World: Atlantic | | | | | | |

DART Status: Ready

TPFDD:

090TP C - Test OPLAN for DART
Unclassified Tunisian Test Case
Created 8-Dec-91 by MITRE CORP

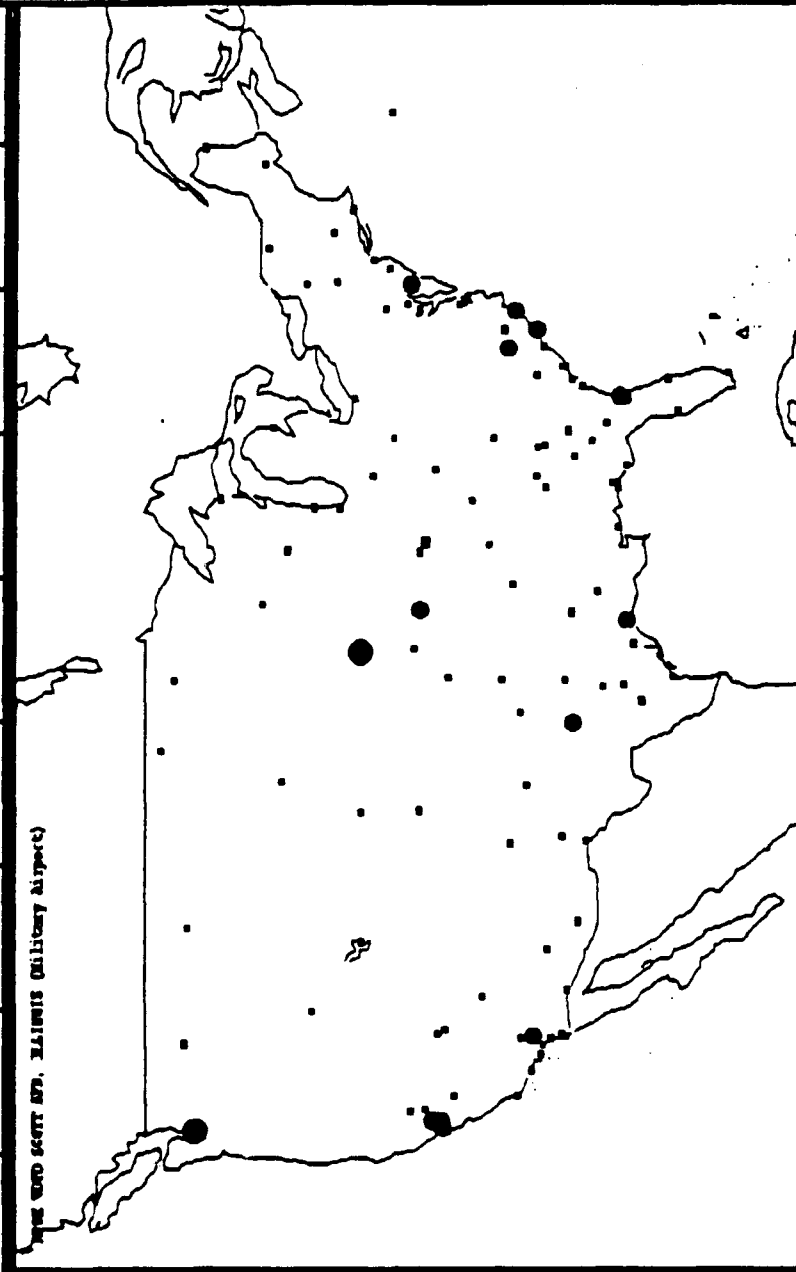


DARTRapidSim

Result: T16 Baseline

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|
| | | | | | | | | | |
| | | | | | | | | | |



Selected Geolocs

↑

↓

All Geolocs

↑

↓

DART Status: Ready

TPFDD:

000TP C- Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



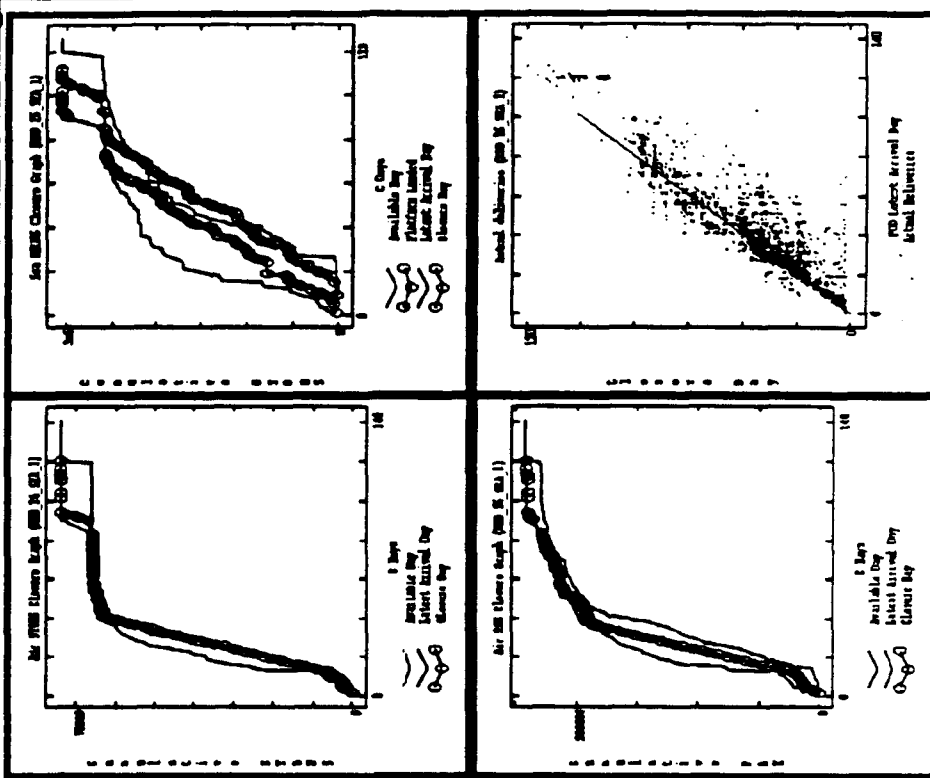
DART|RapidSim

Result: T16 Baseline

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|
| | | | | | | | | | |

| | | | | | |
|-------------------|---------------|------------|----------------|---------------|-------------|
| Selections | | | | Revert | Okay |
| Ships | Planes | POE | POD | | |
| ULNs | Force Modules | Cargo Type | Cargo Category | | |



DART Status: Ready

TPFDD:

0901P C- Test OPLAN for DART
Unclassified Tunisian Test Case
Created 9-Dec-91 by MITRE CORP



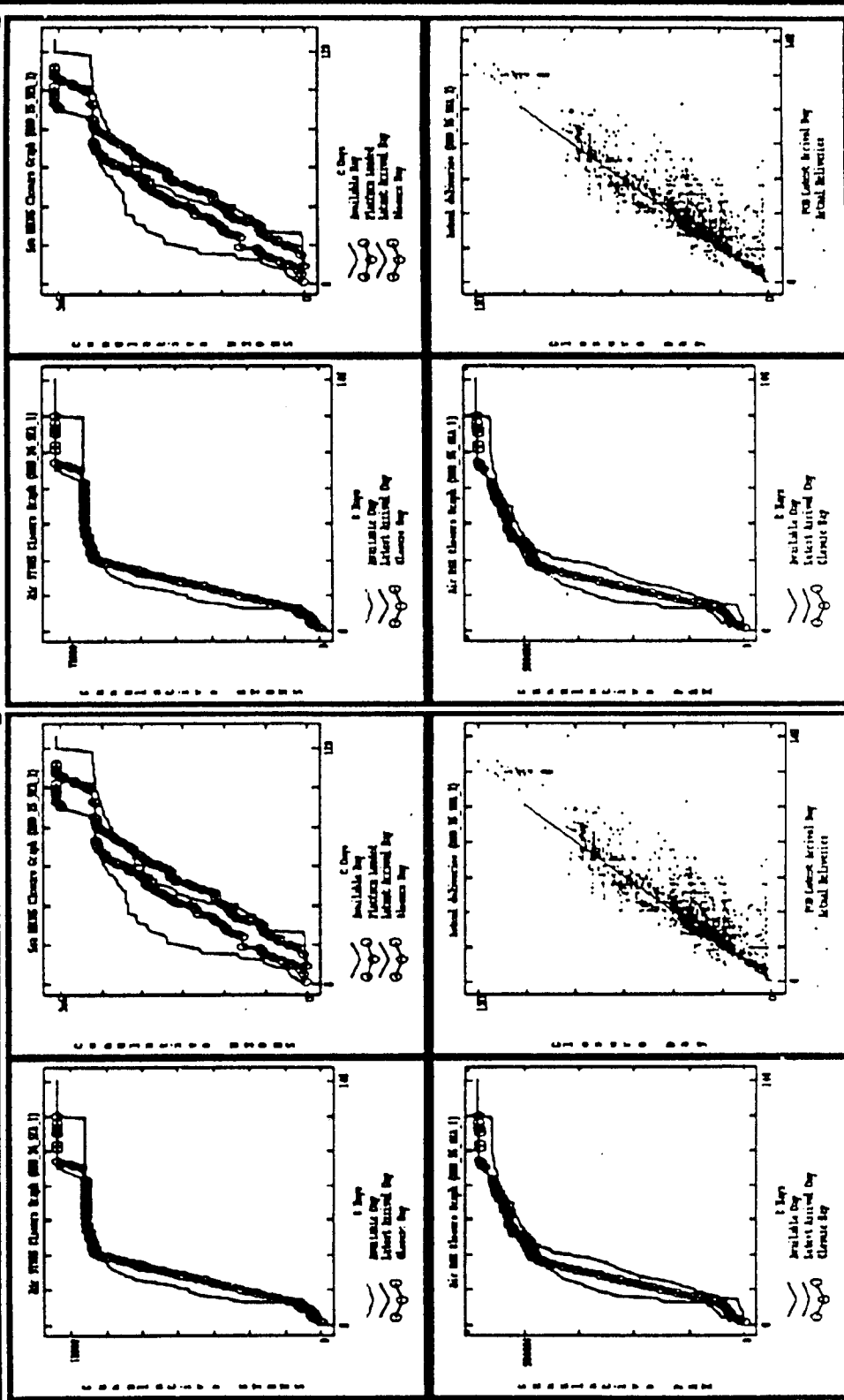
DART

Analysis

Result: T16 Baseline

Mouse Documentation and Help Line

| TPFDD | SETUP | RESULTS | EDIT | MODEL | WINDOW | DISPLAY | UTILITIES | HELP | EXIT |
|-------|-------|---------|------|-------|--------|---------|-----------|------|------|
| | | | | | | | | | |



DART Status: Ready